20-7-11
Bengal Secretariat Library Copy.
To be returned when done with.

X
113

NORTH-WESTERN PROVINCES.

ANNUAL FOREST REPORT

FOR

1869-70.

113

LIBRARY

No. 307F-C.

GOVT., N.-W. PROVINCES.

Public Works Department.

DATED NYNEE TAL, THE 19TH OCTOBER, 1870.

ANNUAL FOREST REPORT OF THE NORTH-WESTERN PROVINCES FOR 1869-70.

Resolution by the Hon'ble the Lieutenant Governor, North-Western Provinces, under date the 19th October, 1870.

READ—

Letters from the Conservator of Forests, North-Western Provinces, Nos. 74 and 88A., dated 10th August and 19th July, 1870, respectively, submitting the Annual Report for 1869-70.

OBSERVATIONS.—The report contains a general retrospect of the operations and results as to the conservancy and finance of the whole Department, which was noticed to be wanting in that for the previous year.

2. The operations for 1868-69 resulted financially in a net revenue of Rs. 2,41,611, which was slightly less than the estimate—Rs. 2,44,813.

3. The estimates for the year under review included the Canal Plantations, which have since been again severed from the Forest Department.

4. Excluding the items belonging to these plantations, it appears that the revenue has risen from Rs. 5,59,196 in 1868-69, to Rs. 6,48,359, or 16 per cent., while the expenditure has increased from Rs. 3,72,007 to Rs. 3,85,145, or rather over 3½ per cent., the effect on the net revenue being an increase from Rs. 1,87,189, to Rs. 2,63,214, or nearly 40 per cent.

5. Marked improvement is shown in most of the Divisions under the heading Minor Produce.

6. In addition to the increase in money receipts, the value of the stock of timber on hand was increased during the year from Rs. 67,674 to Rs. 1,60,888.

7. *Receipts.*—As compared with the Regular Estimate for the year, the receipts show an aggregate increase of Rs. 72,412 under all heads excepting V. and VI., and under these decrease of Rs. 1,251 and Rs. 21,600, respectively.

8. The decrease in Grazing Fees, head V., occurred in the Doon. That under head VI., namely, in Sale of Fruits and Minor Produce, amounted in

Gurhwal to Rs. 20,107, and in the Doon to Rs. 13,869, but with counterbalancing increases elsewhere. These fallings-off, however, the Conservator has stated, in reply to enquiry made, he believes to be apparent only, and due to differences of classifications under the several minor heads, and he has directed the Divisional Officers to be in future more particular in this respect.

9. *Expenditure.*—This was below the estimate under most heads; and where it was not so, the reasons given are clear and sufficient.

10. Under head VI., Plantations, the expenditure was only Rs. 2,031 against estimate of Rs. 6,360. The Conservator, it is understood, considers it useless to attempt any plantation work on a small scale, and what was done in that way was confined to making a commencement at Raneekhet of the introduction of Australian gum and other kinds of trees.

11. Under head X. (Communications) there was short expenditure of Rs. 27,001, due to no officer being available till late in the season to superintend the works.

DOON DIVISION.

12. It was said, in reviewing last year's report, that with the roads which had been cut in the Doon it might be expected that arrangements would be made resulting in considerable increase to the proceeds from Minor Produce. The present report shows a slight increase if all heads be taken together; but there seems strong evidence of great corruption having prevailed among the Subordinate Forest Establishment, which is at present the subject of criminal proceedings in the Courts of the District. The result of these is looked for shortly.

13. There is no doubt much has yet to be done in this Division to bring matters into a proper state of order, and it is expected that a good deal may be effected towards this by co-operation between the Commissioner of the Division and the Conservator during the cold weather. The question adverted to in paragraph 8 of the Report, namely, of clearing and draining the centre of the Eastern Doon, was discussed when His Honor the Lieutenant-Governor was in the Doon. There is much to be said in favour of it; and the attention of the Commissioner and Conservator will be drawn to the subject during their approaching tour of duty together in the Doon, and result reported hereafter.

14. The contraction of the extent of operations for protecting the Forests of Kumaon and Gurhwal from fire is clearly necessary. On the important point of provision of pasturage for the settlers on the cleared lands along the Forest boundary in Kumaon, the Conservator will be requested to consult with Commissioner, and to submit the result of their joint deliberations.

15. The subject of collection of dry wood in the Kumaon and Gurhwal Forests, generally, requires probably further discussion and attention, which the Conservator will no doubt give.

BHAGARUTTEE VALLEY ROAD.

16. As regards the Bhagaruttee Road, it may be remarked that the works are now proceeding under an officer of the Public Works De-

partment Establishment, Mr. Denmeade, and the testimony of the Conservator to the care and ability with which he is supervising them is satisfactory. With this it may be confidently expected that they will proceed as fast as is consistent with their economical execution.

DOORGADEH ROAD.

17. The Doorgadeh Road was quickly and skilfully made, and does great credit to Mr. Greig.

SLEEPER-SUPPLY BHAGARUTTEE VALLEY.

18. The arrangements entered into with Mr. Wilson for supply of sleepers from the Bhagaruttee valley give every promise of most satisfactory results. The difficulties mentioned by the Conservator have retarded progress in the Tonse up to the present time; but the arrangements lately made, by which Mr. Greig has been placed in charge of this work with an increase of staff to aid him, will, it may be hoped, soon result in a satisfactory organization of work in these forests also. And this Government will be glad if the Government of India should accede to its recommendation that sleepers of cheer wood be tried in the Rajpootana Railways as well as of deodar wood.

PLANTATIONS ABOUT RANEEKHET AND CHUKRATTA.

19. The way in which the young trees of Australian kinds have thriven at Raneekhet is gratifying; and His Honor the Lieutenant Governor is glad to be able to mention here that the sanction of the Government of India has been received to the appointment of Mr. Crow, who has already done much to aid in the rearing of these young trees, to the charge of the contemplated plantations in and around Raneekhet for a term which will probably be long enough to see them well established and flourishing.

20. It has already been reported to the Government of India that it is not considered likely that any land will be found suited and available for the formation of plantations near Chukratta, and that there seems no reason why a plentiful supply of fire-wood for the troops and other residents there may not be obtained from the Doon Forests.

PLANTATIONS IN THE PLAINS.

21. The result of Mr. Colvin's examination of the Khadir of the Ganges, mentioned in paragraph 18, has not yet been reported to Government, and it is requested that the result of his observations may now be submitted in a carefully recorded form.

FOREST STAFF.

22. The favourable mention made of the Staff generally, and more especially of Mr. Greig, by the Conservator, appears to His Honor the Lieutenant-Governor well deserved, and will not fail to be satisfactory to the Government of India. His Honor has recently had an opportunity of expressing his sense of Major Pearson's own merits in submitting to the Government of India a recommendation for his promotion.

23. His Honor regrets that the climate of the Goruckpore Forests should have affected so seriously the health of Mr. Thomas, and will be glad if a native with the requisite qualifications, and who would be likely to be better able to resist the effects of the climate, should be found for the post of Assistant Conservator there.

ORDER.—Ordered that copies be forwarded to the Secretary to the Government of India, Public Works Department; Commissioners of Divisions, noted in the margin; Conservator of Forests, North-Western Provinces; and Accountant-General, North-Western Provinces.

Commissioner of Meerut Division.
" Kumaon "
" Benares "
" Jhansie, "
" Rohilkhund "

C. J. HODGSON, COL., R. E.,
Secy. to Govt., N.-W P., P. W. D.

Asstt. Secy. to Government,
N.-W. P., P. W. D.

NORTH-WESTERN PROVINCES,

ANNUAL FOREST REPORT

FOR 1869-70.

From Conservator of Forests, North-Western Provinces, to Secretary to Government, North-Western Provinces, Public Works Department (No. 88A).—Dated the 10th June, 1870.

In drawing up the Forest Report for 1869-70, the principles laid down in paragraph 46 of the review on last year's report have been followed, and the summary of operations and results in each Division is preceded by a general retrospect of the Department during the past year. The whole is followed by a series of extracts from the Divisional Reports of officers which touch on matters of interest, and by a very interesting Report on the Dehra Doon Forests by Doctor King.

General Summary.

2. The actual results as regards receipts and expenditure, compared with the regular estimate, are as follow :—

		1869-70. *Estimate.*	1869-70. *Actuals.*
Receipts ...	... Rs.	5,69,616	Rs. 6,48,359
Expenditure ...	... ,,	4,17,755	,, 3,83,645
Net Revenue ...	... Rs.	1,51,861	Rs. 2,64,714

after deducting the figures for Canal plantations. Thus, in the past year the revenue exceeded the estimate by Rs. 78,743—five of the Divisions showing an increase over their estimate, and three Divisions a decrease. In the following an increase is shown:—

		Estimate.	*Actuals.*	*Surplus.*
Kumaon ...	... Rs.	2,21,700	Rs. 2,55,333	Rs. 33,633
Gurhwal ...	... ,,	1,45,900	,, 1,48,972	,, 3,072
Bhagarutty ...	... ,,	25,200	,, 53,998	,, 28,798
Jounsar ...	... ,,	75,100	,, 93,663	,, 18,563
Jhansie ...	... ,,	7,316	,, 7,639	,, 323
Direction ...	... ,,	...	,, 14	,, 14
			Total surplus	... Rs. 84,403

and in the following a decrease:—

		Estimate.	*Actuals.*	*Decrease.*
Dehra Doon ...	... Rs.	37,200	Rs. 34,762	Rs. 2,438
Goruckpore ...	... ,,	22,500	,, 19,717	,, 2,783
Rohilkhund ...	... ,,	34,700	,, 34,261	,, 439
			Total decrease	... Rs. 5,660
			Deducted from surplus	... ,, 84,403
Balance, being excess of revenue as shown above				... Rs. 78,743

3. As compared with the revenue of the preceding year also, there is an increase in favour of last year of Rs. 89,162 (the figures for Canal plantations being deducted from both years); the revenue for 1868-69 being Rs. 5,59,197 against Rs. 6,48,359 in 1869-70.

Of this the following Divisions show an increase over the preceding year, *viz.* :—

		Increase in favour 1869-70.
Kumaon	Rs.	82,732
Bhagarutty	,,	47,877
Jounsar	,,	14,046
Goruckpore	,,	5,814
Rohilkhund	,,	11
Jhansie	,,	1,766
Direction	,,	14
Total increase ...	Rs.	1,52,260

against which must be placed the decrease in—

Gurhwal	Rs.	39,762
Dehra Doon	,,	23,336
Total decrease ...	Rs.	63,098
Deducted from increases	,,	1,52,260
Gives a total increase in favour of the year of ...	Rs.	89,162

But the decrease in Dehra Doon is due to the stoppageof rowaunahs, which was approved of by Government last year, and is without doubt a necessary measure for conservancy, the revenue under Head II. having diminished from Rs. 35,000 in 1868-69 to Rs. 19,300 in 1869-70, which more than accounts for the decrease; and in Gurhwal the decrease is, of course, due mainly to the stoppage of the timber sale at Sunnye, which was no doubt a prudent measure in an economical point of view. In the expenditure the total fell short of the estimate by Rs. 34,000, owing to the Bhagarutty sleeper-works not being commenced before the winter, as was expected.

4. If the surplus be analysed—whether it be compared with last year, or with the estimate for the year under review—Kumaon, under Mr. Greig, undoubtedly shows the best. The really satisfactory point in the Kumaon revenue is that it is *nearly altogether* to the Kham Tehseel that the increase is due, the revenue under Heads II. and VI. in Kumaon during 1869-70 having over-topped any previous year by upwards of Rs. 30,000, or by an increase of 33 per cent., which is no doubt mainly due to good supervision. But the increase of miscellaneous revenue in Jounsar from Rs 6,000 in 1868-69 to Rs. 28,000 in 1869-70, is hardly less satisfactory, as evincing care on the part of Captain Murray in watching the fresh sources of revenue which become developed from the establish ment of a cantonment at Chukratta. As a general rule, timber sales are no guide in showing what has been done in any Division during any one year; but in this respect the Doon officers must be considered as an

exception. Not the least anxious and troublesome part of his charge consists in the catching, storing, and disposal of the Bhagarutty officer's timber; and in the past year, while his own profitless Division shows a deficit, he has realized a surplus of about Rs. 24,000 by the sale of wood belonging to the Bhagarutty.

5. But, in addition to the revenue in cash, the stock of timber, which is now strictly confined to timber stored in depôts, and available at any moment for sale, at a low valuation, exceeded at the end of the year by Rs. 93,214 the value of the stock at the commencement of the year. And, indeed, by the end of the working season 58,000 cubic feet of sâl and 28,300 sâl kurries additional, in value about a lac of rupees, had been brought home, and stored in the Kumaon depôts; so that, in fact, there is above two and a half lacs of stock now in hand.

6. The Kham Tehseel in Kumaon and Gurhwal continues to give very satisfactory results. The two Divisions gave Rs. 2,21,000 this year against Rs. 2,05,000 in the preceding one, but the increase is entirely due to Kumaon, as there is a falling off of Rs. 10,000 in Gurhwal, probably owing to the numerous changes* of officers during the year, and a consequent relaxation in the supervision. It is to be noticed that the year was an exceptionally good one for the forests, consequent on the very high price of grain which ruled in Rohilkhund through the early part of the year, and which drove so many persons to eke out a subsistence by fetching out bamboos and other forest produce for sale. Indeed, in the three first months of 1870-71, there has been a falling off in the miscellaneous receipts of Rs. 10,000, as compared with the three first months of 1869-70, in Kumaon alone. It is supposed that this is owing to the plentiful harvest this year, and perhaps in part to the market for bamboos, &c., being somewhat over-stocked by excessive export last year. Some interesting particulars as to this revenue will be found in an extract from Mr. Greig's report, and in a note on the Gurhwal Kham Tehseel establishment, which was drawn up for me by Doctor King.

7. The only Division now in bad order is the Doon, which does not pay its cost, or anything like it, the expenditure being Rs. 43,000 against a revenue of Rs. 34,700. Efforts are now being made to obtain convictions in the criminal courts against five of the principal Native Forest Officers for bribery and criminal breach of trust. It is credibly stated that one of these men has made a lac of rupees, and another one Rs. 25,000 during the ten years they have been in the Doon Forests. At this rate, it is not surprising that the revenue is low ; but it may be stated that in one visit to the Sewalicks, Doctor King counted upwards of forty charcoal kilns, and several thousand young sâl trees felled on their stumps in about five miles of forest, while the revenue for charcoal for three months at the three nearest forest chowkies amounted only to a very few rupees. The boundaries also of the Government forests, where they march both with grantees'

* Note.—Four officers were in charge of Gurhwal during the past year—Mr. J. Thompson to 21st August (resigned the service), Mr. Greig to 4th December, Doctor King to 14th February, and Mr. Brereton from that date to the end of the year.

lands and village forests, though generally marked off, require confirmation by authority, as the old boundaries have been altered by numerous exchanges.

8. I should be inclined myself to favour a plan proposed by the Superintendent of the Doon, and approved of by the Commissioner of Meerut, of opening out the whole of the centre of the Eastern Doon for cultivation, by clearing and draining it. It is now a dense tangled jungle, and I cannot say that I have seen much wood in it that is likely to turn into good timber. There can be no doubt that by so doing the salubrity of this beautiful valley would be materially improved; and, though the forests would be reduced and confined to the hills and slopes on either side, conservancy would be very much facilitated.

9. Goruckpore and Jhansie have been both fully reported on by me during the past year. There is an improvement in Goruckpore of Rs. 6,000 (about 30 per cent.) in the revenue this year, which is creditable to Mr. Thomas, and is as much, perhaps, as could be expected with so inefficient and worn-out an old man as he has there for his head native officer. (This man has been recommended for discharge.) It is to be feared these forests are very unhealthy. Mr. Vipon died there last year, and Mr. Thomas has escaped hardly with his life there this year. If a Native Assistant Conservator could be found, he might be tried there. In Jhansie the arrangements for reducing expenditure, which were made on my tour there with the Civil Officers, have resulted in a small surplus of Rs. 2,000 in place of a deficit. The Rohilkhund Forests, which are for the most part leased out, have produced the revenue expected of them.

10. I shall now proceed to examine the details of the year's work as regards--I. Inspections; II. Conservancy; III. Timber-yield; IV. Finance; V. General Remarks.

I.—Inspections.

11. During the past year I have visited every Division under my charge. I have twice visited the sleeper-works in the Bhagarutty, and three times those in the Tonse. All the officers have continued in their respective forests during the working season; and Captain Murray, Mr. O'Callaghan, and Mr. Grant, during the whole year.

II.—Conservancy.

1.—*Jungle-fires, &c.*

12. The fire conservancy operations were successful in the Doon, or very nearly so; but they were on a small scale, being confined to the isolated blocks of the Nagseed hill and Dholcote forests, through which broad lines were cut, intersecting the forest at right angles, and dividing it into square blocks of moderate dimensions, so that when a fire broke out it was more easily prevented from spreading. If it had not been for the great difficulty of obtaining labour, a larger space would have been thus protected. The Kumaon and Gurhwal Forests were burnt, as previously, to their grievous detriment, notwithstanding the care taken by Colonel Baugh, to whom the work of protecting them was entrusted. Next year it is proposed to follow the recommendations contained in paragraph 12 of

Government of India, Public Works Department, No. 270 F., of the 27th of May last, and a limited number of reserves, containing young sâl of excellent quality, will be selected, as was done in the Doon, and all protective efforts will be concentrated on them.

13. In paragraph 9 of the Government review on last year's report, and in paragraph 13 of the letter of the Government of India, above referred to, the question of admitting cattle-stations above the Forest Line is touched upon, in certain places where they would not be likely to do much harm. The question has been fully considered, and discussed with the Civil Officers, who are no doubt much pressed by the large cattle-owners on the subject. But the Government of India are no doubt right; and the Conservator is convinced that it would be an error to admit cattle again above the Forest Line. At the same time some arrangement must be made for the wants of the rapidly-increasing agricultural population which is settling along the Forest boundary in the neighbourhood of Ramnugger, consequent on the completion of the irrigation works on the Kosee, for when the Forest boundaries were fixed this population did not exist. This, perhaps, may be best done by marking off for them a sufficient area of village jungles and grazing grounds.

14. As connected with conservancy, a very important question arises in regard to the collection of dry wood. This item in Kumaon and Gurhwal last year realised a revenue of upwards of Rs. 60,000, or above one-fourth of the whole Kham revenue; but it is a question if allowing the people into the forest to collect it does not very often lead to the forest being burned to enable them to find it, to say nothing of unlimited pilfering of all sorts. Moreover, it is suspected that a system goes on in the rains, when supervision is quite impossible, of killing sound trees by scooping a hole in them, and burning them with charcoal and a blow pipe, when they are removed as dead timber in the cold weather. This is believed to be done by the Taroos on behalf of the timber-dealers. There is no doubt an immense amount of Captain Reid's fellings still left in the forest, but some magnificent koloos, or butt pieces, which were being removed down the Ramgunga last year, did not to me bear the appearance of having laid ten or twelve years in the forest. My attention is directed to this question, which mainly hinges on the point whether if Government determined to forego the revenue, the forest would really be better protected. At present, while desiring to avoid coming to a hasty decision on imperfect information, I incline to think that the collection of dry wood should be confined to certain defined limits, where it could be better supervised.

2.—*Plantations.*

15. The Australian and fruit trees for Ranee khet (adverted to in paragraphs 13 and 14 of the review on last year's report, and in paragraph 17 of the Government of India's letter on the same subject, as "*highly important*") are progressing very favourably, and in some cases have shown wonderful progress. Unfortunately a number of the fruit trees which were got out from England died on their way up-country from the heat,

as they arrived somewhat too late at Calcutta. Care shall be taken to avoid this contingency another time.

16. Much is owed to the kindness of Captain Birney, R. E., Executive Engineer, and of Mr. Craw of the Doonagiree Tea Plantation, for their kindness in looking after these trees. But attention is earnestly solicited to the question of remuneration to Mr. Craw for his aid in this matter, for Mr. Craw lives at a considerable distance from Raneekhet, and his assistance has been kindly given at the expense of considerable trouble to himself. The last order of Government on the subject was to the effect that the Annual Report would be awaited; and, as nothing can be more satisfactory than the progress of the experiment, it is hoped that some decision may be now arrived at. If Raneekhet is to be hereafter a large station, the successful introduction of Australian trees is a matter of the highest importance, not only as adding to the beauty of the place, but in respect to fuel, for which the introduction of rapidly-growing trees, suited for this purpose, is most necessary.

17. The question of covering the bare hills at Chukratta with trees, and of providing a supply of fuel near at hand for the cantonment, is a more difficult one. The Australians entrusted to Captain Ward seem to be doing very well, but very great care has been expended on them. Those which were more roughly treated by Major Rowland of the 55th Regiment, who most kindly gave his aid to the good work, have not shown such good results, as the seed did not germinate very satisfactorily. I am inclined to fear that the climate of Chukratta will be found too severe for these trees, unless great care is given to them, which is impossible for a large number. In this case, probably the only possible way of supplying this cantonment with fuel after a few years will be to complete the cart-road, and send it up from the Doon.

18. The question of fuel plantations in the khadir of the Ganges for the railway has not been forgotten; and Mr. Colvin last cold weather examined the khadir generally with this in view, and was favourably impressed with its suitability. Any more detailed examination was totally inpossible this year, as both my own time and that of Doctor King has been most fully taken up with other work, that it was impossible to put on one side.

III.—Maps and Boundaries.

19. Mr. Grant has been out the whole year, and has worked well. Between May and December he completed a map of the Bhagarutty Forests, and since then he has been employed on the Doon map, which is now well forward. Both these maps are complete as regards outlines, but it will take another season to fill in details and to complete the map of the deodar forests in the Neelung river, which joins the Bhagarutty ten miles below Gungootree.

20. The Conservator's office has been for sometime in correspondence with the Surveyor-General on the question of obtaining from his

office enlarged maps of the Himalayas, in which the Forest Officers might fill in the forests. But Colonel Walker was strongly of opinion that the old map of the Himalayas north of Mussoorie, which was made very rapidly soon after the country came under British control, was not sufficiently accurate to be enlarged. The present plan will, therefore, be continued, which, though slower, is more satisfactory, namely, of enlarging with a pentograph the actual part of the forest required, and then sketching the forests in detail into it.

21. The only boundaries which still require to be defined are those of the Doon. These no doubt were marked off for the most part by Mr. Williams, the late Commissioner of Meerut, but the exchanges which he made were not ratified by Government, and in many cases no authoritative record exists of them, so that numerous misunderstandings have taken place as to the right of possession to the wood, &c. The question has, however, now been taken up by the present Commissioner of Meerut, and I purpose to spend a portion of next cold weather in the Doon with him on this work, when all the boundaries will be put on a legal and satisfactory footing.

IV.—Roads.

22. The principal Forest Road-works carried out during the past year, are as follow :—

1*st*,—Bhagarutty Valley Road.

2*nd*,—The Droogadeh Forest Road (Kumaon).

3*rd*,—The Kuldoonga Road, Kumaon, (on the Sarda).

4*th*,—The Forest paths in Jounsar.

23. The works on the Bhagarutty road were for sometime in abeyance, owing to the action of Government with regard to it being uncertain until an estimate was sent in, which was done about July. After this the principal works carried out were the completion of two wire rope-bridges on the upper section at the dangerous crossings of Mekwa and Bhookee, the partial completion of a third bridge at Loharinag, and the blasting of a narrow path between Bhookee and Mekwa across the precipice of the Mela-ka-chown. Since Mr. Denmeade, Executive Engineer, has joined the works, the Barahat and Butwaree precipices have been attacked and nearly completed, and a narrow tract for animals has been completely opened from Barahat to Butwaree. The work is now progressing on a regular principle above Butwaree, and every confidence may be felt in Mr. Denmeade that useful and sound work will be completed, at no unreasonable cost to Government. About Rs. 30,000 were spent on the road during the past year, and the estimate for its completion by Mr. O'Callaghan was in July last for a lac and a half of rupees. The pay of an Executive Engineer was not calculated in this amount, and will anount to about Rs. 10,000 per annum. It is to be hoped that it will be saved in superior work. It may be said that Mr. Denmeade has expressed himself as fully concurring in Mr. O'Callaghan's estimate in all main points, so it is trusted that it will not be exceeded. Some interesting particulars as to the cost

of the bridges from Mr. O'Callaghan's report are given in the appendix, together with a memorandum from Mr. Denmeade.

24. The Droogadeh cart-road from the Kosee to the Ramgunga, to bring out the timber of that forest, was completed by Mr. Greig for Rs.15,090, being 14 miles and 76 chains in length. This most valuable forest work reflects the highest credit on Mr. Greig, both for the skill with which it was laid out, and the cheapness with which it was constructed, as may be deduced from the following details of work executed :—

Droogadeh Road.—

Length—14 miles 76 chains.

Rise of ridge—(probably) about 500 feet.

Excavation in earth and gravel 1,038,942 cubic feet.

Ditto in loose rock not genetally requiring blasting—586,511 cubic feet.

Ditto blasting in hard rock—92,114 cubic feet.

If the commission paid to Motee Ram, Forest Treasurer, of 10 per cent. be deducted, the road cost only Rs 13,590, including the blasting of two considerable precipices. It is calculated that besides being a valuable line of communication for forest purposes, five lacs of rupees worth of timber may be removed by this road—about two lacs worth having been already removed this year.

25. The road from Burumdeo up the Sarda to Kuldoonga, to open that valuable sâl forest, was commenced, and Rs. 3,000 expended on it. Some good work was done; but when the season became unhealthy, the works had to be stopped, and will be completed next year.

26. In Jounsar 21 miles of mule tracks were completed, so as to be passable for a poney ; 16 miles more were laid out, and the road was completed from Chukratta to within half a mile of the top of the Deobund hill. The amount expended up to the end of the year was Rs. 10,800, which was somewhat more than was calculated, but the competition for labour in Jounsar is now so great that former rates for works cannot for a moment be thought of. Deducting Rs. 3,600 for the cost of the Deobund road (estimated at Rs. 5,000, but requiring fully the balance to complete it to the top), the 21 miles of mule track cost Rs. 350 a mile, in place of Rs. 250 estimated, and it is doubted if this figure can be any longer kept.

III.—Timber Operations.

27. The principal timber operations of the past year are as follow :—

1*st*,—The sâl fellings in Kumaon.

2*nd*,—The auction sale in Gurhwal.

3*rd*,—The supply of timber to Chukratta.

4*th*,—The sleeper operations in the Tonse and Bhagarutty.

28. The timber operations in the Kumaon Sâl Forests under Mr. Greig have been very extensive. They consist of two separate works, 1st, the removal to the Depôts of 1,045 logs and 12,000 kurries from the Koorya Kurruk Forest, which were felled and cut last year; and, 2nd, the felling, logging, and conveying to Depôt of 2,500 trees in the Droogadeh Forest. The result of the season's work was that 2,695 logs, containing 107,820 cubic feet of timber (an average of 40 cubic feet each), were brought to Depôt, while 1,560 logs, equal to 62,000 cubic feet, remain in the forest for removal next year. Besides the above, 40,683 sâl kurries were sawn out of the tops and butts of the trees felled as above, and were all brought to Depôt. These kurries contained about 64,000 cubic feet of timber additional, so that the season's work is represented by close on two lacs of cubic feet of timber brought to Depôt, of which one-third was in a prepared state.

29. It is not quite determined whether it will be better to place this timber in the market next season, or to reserve it for the present with a view to the possible requirements of Ranee-khet, as well as of the railway there, and of the Oudh and Rohilkhund lines also. It would seem, in a conservancy point of view, desirable to spare the sound timber, of which there is not too much in the forests, and rather turn attention to supplying the native market with kurries, for which there is always a large demand, which fetch a good price, and which can be made out of the unsound and crooked trees, the removal of which from the forest is very desirable, in order to give room to the growing trees. In this case heavy logs should only be felled and brought out when there is an actual demand for them, a good supply being kept in Depôt to meet urgent requirements on the part of Government or of the railway.

30. There were about 62,000 cubic feet of very fine sâl timber in the Semulchour (Gurhwal) Depôt, the proceeds of last year's work, and an auction was held in January last with a view of seeing what it would fetch in open market. The result was not successful, as only two or three bonâ fide purchasers appeared, and these were evidently in league, as bids were not forthcoming except when an outsider appeared, which was only the case for a few small lots; and then these men combined to drive him out, bidding as high as Re. 1-8-0 per cubic foot at the upper Depôt. As there is not much sound timber left in the accessible parts of the Gurhwal Forests, it does not seem advisable to part with this timber in a hurry, as it is exceedingly fine. It could easily be carted to Hurdwar, and sent down to any point on the canal or railway. Attention might then be turned to cutting kurries in the Mondhal valley and other forests, from which the removal of a portion of the inferior timber is so desirable. It may be mentioned that after the auction was closed, Motee Ram, the Forest Treasurer, offered to buy the whole of the timber for 12½ annas per cubic foot, which was, of course, refused.

31. In the Bhagarutty, the whole of the logs put into the river last season, in number 5,765, have been made over to Mr. Wilson for the sleeper-works. As they never came to Depôt, they do not appear on the returns, though the amount of his receipt will appear in the accounts

next year for them at Rs. 6 each. It is not easy to explain the reason why the cheer logs at the Hurdwar Depôt will not sell, considering the demand for timber, and the price which it fetches in the Doon ; but, perhaps, it is the interest of the timber-dealers rather to keep up prices than to introduce a new article into the market; any how, only 400 logs out of 2,000 which came to Depôt found a sale at the low price of 4 annas a cubic foot. Mr. Scott of Mussoorie wished to purchase the whole lot for sleepers, but the Chief Engineer of the East Indian Railway would not sanction it, as the trees had not been girdled, and therefore he supposed the wood was not seasoned.

32. To Chukratta during the past year the following is the amount of timber that has been delivered, the greater portion being for Government works:—

Deodar Planks	44,584	=64,710 cubic feet.
,, Kurries	20,190	
Raiee Planks	26,564	=31,206 cubic feet.
,, Kurries	7,209	

Besides these, 15,606 planks were sawn up by Captain Murray for the Executive Engineer, together with 459 kurries, after the failure of his contractor, Mr. Johnston, who broke down entirely in the work which he undertook. Nearly 4,000 bullies were also given to the Chukratta works, and the whole arrangements for fuel also devolved on the Forest Department.

33. The notice of Government is specially solicited to the above out-turn of work to Chukratta during the past year, involving as it did the supply of considerably upwards of a lac of pieces of sawn timber; especially as it is believed that a general idea prevails that the wants of Chukratta are very small, and do not require an officer to look after them. It must be remenbered that not only has the whole of this wood to be prepared, but it also has to be conveyed for a distance of from ten to fifteen miles on men's backs, from the forests to Chukratta ; and that nothing but the closest attention to the payment of each man daily for his work will suffice to keep such suspicious individuals as these hill-men are together.

34. But the really most important work commenced in the forests during the past year is the preparation of the sleepers for the Delhi and Rewarree Railway. These have been commenced in the Tonse under Captain Murray, and in the Bhagarutty by Mr. Wilson (as a contractor) under Mr. O'Callaghan. As regards the first of these rivers, the distance of the forests above the river does not admit, as a general rule, of the logs being rolled down into the river. The sleepers have, therefore, to be cut up in the forest and carried there. Up to the end of June last, about 5,127 sleepers had been sawn up, and carrying to the river had commenced ; while logs for about 35,000 more sleepers were ready collected in the sawing depôts in the Mundhole Forest. In the next forest 3,500 trees had been marked, and were being felled and logged, and at Datmeer (the highest deodar forest on the Tonse) 2,000 trees had been felled

and were being logged, while 524 logs had been put into the river. It is proposed that the logs from this forest, which can be worked down to the river, should supply work to the sawyers in the cold weather in the Doon. The work in the Tonse has been commenced under great difficulties from the daily increasing scarcity of labour in the hills, and the difficulty of keeping up a regular supply of food for large gangs of work-people in a country as yet unprovided with roads. The bites of the "potoo fly"* also are a terrible scourge to plains-men, and just before my return to the Tonse last June, 180 pair of sawyers all bolted off, declaring that nothing should induce them to work in such a place. This has necessitated the collection of hill-sawyers, whose work is of much inferior quality to that of the plains-men, and in meantime the sawing is nearly stopped. In the Bhagarutty matters are progressing at present very satisfactorily. Mr. Wilson, who only commenced work in April, had by the end of June 17,836 logs close to the river-side, ready to be rolled in the moment it rose. In addition to these, nearly 6,000 logs, the produce of last season's work, have been made over to Mr. Wilson. The length of the river from Gungootree to the Doon has been divided into several lengths, and gangs of men put in charge of each, who will keep continually pushing on the logs. If the river fills well this year upwards of 20,000 logs should get below Teeree, if not altogether to the Doon, before the cold weather, and in this case the out-turn of this season's work should be from 50,000 to 60,000 sleepers,—a number which will exceed the most sanguine estimate of the capabilities I had formed of this river. Altogether, if things once get fairly started, and the difficulties in the Tonse can be got over, there seems no reason why the sleeper-works for the State Railways should not be a success.

35. Besides the Government works, another set of large sleeper operations have been going on in the hills for the East Indian Railway, under the management of Mr. Scott of Mussoorie. These are for cheer sleepers in the Augusmoondee Forests. Here, as in the Tonse, it has been found better to cut up the sleepers in the forests, and then to float them out to Hurdwar. Mr. Scott told me that the out-turn of this year's work was 44,000 sleepers, against 37,000 last year. About 9,000 trees have been girdled for felling next year. If I may be permitted to say so, this work has been conducted in a highly creditable and successful manner by Mr. Scott on behalf of the Railway, as far as has fallen under my observation. The sleepers, also, which I inspected at Allygurh, were in excellent condition, and very well sawn. On account, however, of the extreme cheapness of ready creosoted Norway pine-sleepers at Calcutta, as well as (I believe) on account of the difficulty of keeping up a regular supply of creosote, the East Indian Railway Company have determined not to renew their lease of the cheer forests of the Mundaknee, which expires at the end of 1871.

IV.—Financial.

36. As this portion of the subject was fully treated in detail at the commencement of the report, it only remains here to notice the "outstand-

* Note—I myself was laid up at Mundhole with severe fever and swelled legs for eight days last year from potoo bites.—G. F. P.

ings." A reference to Form 23 will show that these have been reduced from Rs. 1,58,666 at the commencement of the year, to Rs. 37,441 at its close; and, as the account is made up in the very middle of the working season, while all the advances to contractors are still unadjusted, this can hardly be looked on as otherwise than satisfactory.

V.—General Remarks.

37. Perhaps the greatest step in the way of real advancement in forest management made during the past year has been the appointment of an officer to the charge of the office at head-quarters, and to the supervision of the accounts. During my inspection of the Forest Divisions, I have constantly felt the enormous advantage of having a responsible officer at head-quarters, and the beneficial manner in which his presence is felt in all the Divisions is most evident. It is impossible for any item of doubtful expenditure now to pass without criticism; and I beg to state that I feel grateful to Mr. Colvin for the firmness with which he continues to exercise his somewhat thankless duty of checking and calling in question expenditure, which I feel sure is for the good of the Department, and which all officers should feel it their duty to join with me in aiding Mr. Colvin to carry out. Nor would I omit to mention the excellent services of my Head Assistant, Mr. Jeffries, in the office. The accounts of the Department, with the exception of the Doon balances, which are now before Government for orders, are, it is believed, in a thoroughly satisfactory condition.

38. Attention has been directed to the large sums drawn as commission by Motee Ram, the Forest Treasurer. This man has been of great service to Government in the earlier years of the Department; and for the management of the enormous miscellaneous revenue in Kumaon and Gurhwal, as well as for the advances to cartmen and others, the assistance of a man thoroughly acquainted with the resources of the country seems absolutely necessary. But his agreement is being revised, and a new one drawn out, which, while it will ensure him sufficient remuneration, will limit his power, and ensure a considerable saving to Government.

39. The question of an efficient native establishment, which is alluded to in paragraph 47 of the review on last report, as well as in the Government of India's remarks on it, as one "to which earnest attention must be turned," has not been lost sight of. Captain Murray has secured the services of a younger brother of Kurm Singh, who succeeded Muddun Singh as Wuzeer of Bawur, the principal forest district on the British portion of the Tonse. This lad, who is now about 18 years of age, is learning to read and write in the Jounsar Forest Office; and, if he shows intelligence and a disposition to work, he shall assuredly be brought to the notice of Government for a suitable situation.

40. But it is to the establishment of vernacular schools in the forest districts and in the hills that the Forest-Department must mainly look to provide men suited to its wants in all lower capacities; and at present,

however much has been effected in Kumaon by Colonel Ramsay, *there is not a single vernacular school north of Deobund* in the pergunnahs of Jounsar Bawur; nor, except the putwaree and chowkeedar, is there a single man who can read or write. Hill-men, judging from the Kumaon side, have a natural aptitude for reading and writing, and the attention of the Inspector of Schools, Meerut Circle, might perhaps be conveniently directed to the establishment of schools in Jounsar Bawur. I am happy to state that, with the assistance of the Assistant Commissioner of Gurhwal, and the American Wesleyan Mission at Paoree, I hope to see a forest school established next season at Kotwara, in the centre of the Gurhwal Sâl Forests.

41. The satisfactory termination of the boundary dispute on the Tonse between Bawur and the Native State of Taroche, is a matter of congratulation. Not only will the control for all practical purposes of both banks of the river be assured to the Department by this decision, but the valuable deodar forest of Mundhole, which has already furnished logs for half a lac of sleepers without feeling it, has been decided as the property of Government. Moreover, a dispute of thirty years' standing has been settled in a manner which will have the best moral effect with the hill people on our side, for there can be no doubt that the attempted seizure of the Bawur villages which lie on the west bank of the Tonse by the Thakoor of Taroche, was (as was characterised by Colonel Lawrence, C B., late Superintendent of the Simla Hill States) the result of a gross act of perfidy and aggression on the part of the Thakoor.

42. In connection with the sleeper-works on the Tonse, a very important question is now rising up in the shape of the paucity of labour. This is partly caused, it is believed, by the extension of cultivation, consequent on the rise in the price of grain, and is partly owing to the demand for labour, both public and private, consequent on the establishment of the new Cantonment of Chukratta. At present from Rs. 7 to Rs. 8 are paid for coolies who really do next to no work, and the men who carry timber down to Chukratta earn easily from 8 to 10 annas a day. It is for this reason that it seems so undesirable to hand over the works of sawing and carrying timber from the Deobund Forests to Chukratta to the Public Works Department; for, if two Departments begin to compete with each other for labour, as a certain result prices will rise still higher, and Government will very soon be a loser of ten times the amount of the pay of a special officer to look after these works under the superintendence of the Jounsar Divisional Forest Officer, and subject to his control.

43. During the past year the two first Forest Officers who have been educated on the continent of Europe—Messrs. Henman and Moir—have joined the Forest Department. Mr. Henman, who was a remarkably intelligent young man, lost his life by a lamentable accident while at work in the Jounsar Forests, only three days after he joined. It is supposed that he must have slipped from inadvertence, as the place where he fell could not be called a particularly dangerous one. He was a young man of remarkable intelligence, and those who were brought in contact with him, during the short time he was with us, seem to have been attracted by

him in a remarkable manner. To me his services have been a severe loss at this particular juncture in the Tonse Forests. Mr. Moir worked steadily under Mr. Greig in the Kumaon Sâl Forests during the cold season, and by his steady, quiet conduct, gave satisfaction. He is now studying Hindustanee, and attending to the planting out of the Australian trees at Rancekhet. It is purposed to send him, as soon as he has mastered the language, to the sleeper-works on the Tonse.

44. The establishment of an efficient bhoom to catch the timber in the Ganges at the point where the river leaves the mountains, has taken up the attention of some of the most experienced Canal Engineers and Forest Officers, but without success. A cable of bamboos supporting a wire-rope was stretched across the river near Rikhekhess. The greatest care was taken in its construction by Mr. O'Callaghan; but, like the old bhooms, when the heavy floods came on, it became submerged, and consequently in time the bamboos began to get loose, and to be washed away. The old difficulty then returns. It is believed that no bhoom will be efficient which is not supported in the centre by floats of some sort; and then the question is how to moor any such supports. This question has yet to be solved. In the appendix will be found particulars from Mr. O'Callaghan's report as to the erection and cost of the bhoom.

45. It only remains now to notice the services of officers, and I beg to say that I am well satisfied with them all, for I certainly never had a better team to work under me. If one name must be selected for the amount of work done during the year, it must be that of Mr. Greig, whether for road-work, timber-work, or for careful administration of miscellaneous revenue. But in selecting him for this commendation, no disparagement must be permitted of the great zeal of Doctor King in the thankless task of managing the Doon, which for many years at least can never bring credit to any officer, nor to the general intelligence and good work shown by Mr. Brereton, who has only lately joined these Provinces, and of Mr. Grant in survey-work. Mr. Brereton's greatly improved health since he left the Central Provinces is also a matter of congratulation. Captain Murray has had very severe work in starting the sleepers in the Tonse in addition to the works at Chukratta, and has shown himself, as before, an indefatigable worker and a trustworthy officer. He also deserves praise for his development of the miscellaneous revenue in Jounsar. Among the subordinate officers, Mr. Bagshawe shows intelligence, and promises to become a good Forest Officer.

G. F. PEARSON, Major,
Conservator of Forests, N.-W. P.

P. S.—In submitting the extracts as in Appendix, the Conservator does not bind himself to abide by all the opinions advanced by his subordinates in them, which will be noticed in their proper place to those officers, if necessary; but it is thought that they are full of interest, more especially the very able reports on the Dhoon and on the Gurhwal Kham Tehseel, by Doctor King.

APPENDICES.

(1.) REPORT ON DEHRA DOON FORESTS, BY Dr. G. KING, ASSISTANT CONSERVATOR.

I.—Inspection of Forests.

I received charge of the Dehra Doon Division from Mr. Broreton on 14th February. Since joining I have been in camp as much as possible; but, owing to circumstances, subsequently to be alluded to, my inspections have chiefly been confined to the forests of the Eastern Doon. I have, however, also visited the Western Doon and sub-Sewalick Forests, but I have not had leisure to examine except in the most cursory way the forests covering the lower ridges of the Himalayas which Government have leased from the Rajah of Tehree, and which fall under the care of the Doon Forest Officer. These I consider worthy of careful inspection; and, if leisure permits during the ensuing cold season, I should like to devote some time to exploration in the lower ranges and in the valleys running between them. In the Doon, and along the northern slopes of the Sewalicks, the only timber of value is sâl. My impressions of the condition of the sâl forests may be briefly summed up as follows :—

Virgin forest nowhere remains. There are no large or old trees; the timber consists chiefly of saplings with some few trees of about 30 years of age interspersed. The stumps occurring everywhere in the forests prove that not many years ago heavier sâl than any now existing in them was cut in the Doon; and enquiries I have made, and the timbers still present in the roofs of houses in this station and in Mussoorie, confirm this. The facilities of export from the Doon, and the nearness of markets for its timber, have so encouraged felling, that of the forests which undoubtedly covered its whole extent only a wreck remained when Government first began to institute measures of conservancy. These same causes, together with the opportunities for thieving afforded by the fact that the Government forests do not form a compact block, but are intersected by numerous private jungles, have continued to act as stimulants to felling, both licensed and illicit, in the tracts which Government took up for conservancy. Only quite recently has all licensed felling in the Government forests been put a stop to. The difficulty now remaining is to put down illicit cutting.

II.—Conservancy and Communications.

The conditions of the forests appear now to be such that only in the strictest conservancy lies any hope of their recovery. The isolated patches where this is so difficult as to be practically impossible, it might be better to clear entirely of their timber, and to abandon the idea of retaining them as forests.

It is true that the Doon sâl, under the most favourable circumstances, will never equal in girth and soundness that of the vigin forests of Gurhwal and Kumaon; but it is equally true that so long as native houses continue to be built as they now are, the small timber yielded by the Doon forests will meet a steady sale. It is also true that in the event of the entire clearance of the Doon forests, one great source in upper India of the light timber (bullies, kurries, &c.) used in native building would be cut off. The value of these articles is daily increasing. At the present moment they fetch from twice to ten times the price they did ten years ago. I give some examples showing the rise in value of Doon timber. On 18th August, 1860, a new and increased scale of timber rates was issued by the officer in charge of the Doon Forests. According to it, sâl kurries 15 feet long were charged Rs. 3 a score. To-day the same articles fetch from Rs. 25 to Rs. 40.

Twelve feet sâl kurries then brought Rs. 2-8-0 per score, now they bring Rs. 22 to Rs 30.

The contrast between past and present prices is even better seen in the matter of kooloos (mortars) and chooraus (pestles), of which the common country sugar-mills

are formed. In 1860, a sâl kooloo of any girth and up to 18 feet in length was allowed to be taken from the forests on payment of Rs. 3. A very poor kooloo, which I saw brought from a grantee's jungle the other day, though only about 12 feet long, 5 feet in girth, and unsound withal, cost in the jungle Rs. 37. Prior to 1860, choorans brought from Re. 1 to Re. 1-12-0 per score; in 1860 the price was raised to Rs. 3; now Rs. 7-8-0 and Rs. 8 are the common rates.

There is no increased demand for the timber used in native house-building and like purposes. On the contrary, during the past year or two of scarcity, building has been very slack. These enhanced rates may, therefore, be taken to indicate a steadily diminishing supply. As there is no reproduction at all commensurate with the felling, prices will continue to rise; and a strict conservancy which would for a few years entirely close the Government forests, while those of grantees are being cleared, would simply amount to a deferring of revenue that it might one day be enhanced: and this appears to be the best policy, whether regarded as a matter of commerce or of forestry.

1. *Cutting Creepers.*—Nothing has been done during the year on this head. There are very few creepers to be cut.

2. *Fire Conservancy.*—An attempt was made to effect the complete fire conservancy of the Nagsidh Sâl Forest by removing the grass on the lines cut in it by Mr. Colvin, so as to separate the forest into blocks. This measure was to a great extent successful, and a large part of this forest has been preserved from fire, though certain parts have undoubtedly been burnt. The plan that was devised for the protection in like manner of the Dholekote Forest failed from the impossibility of getting labour at the proper time.

I cannot express myself too strongly as to the mischief which is done by the fires which rage so freely in the jungles during the hot weather. They bring simple ruin to large tracts of forest. Trees that are thick enough and tall enough to escape being actually burnt, are nevertheless much injured, as the effect of repeated fires is to make them hide-bound, hollow, and unhealthy. But seedlings are burnt in myriads, and the hope of supplies for the future is thus seriously interfered with. It is difficult to estimate in money the damage done, but it must be very great. The origin of these fires is various: some arise from the carelessness of herdsmen in scattering fire; others are intentionally lit by these people with a view of getting flushes of young and tender grass for their cattle; many tracts are burnt by shikarees for the purpose of concentrating game in certain spots; while, I regret to say, a number of the fires that occurred during the season just closed owed their origin, I have too good reason to believe, to the necessity which was forced upon illicit fellers, and the members of the native establishment who had winked at their doings, to obliterate the marks of their villainy. On one occasion, in particular, when I had discovered some illicit felling in a Government jungle, my further enquiries were frustrated by the appearance on the same evening of fires in a dozen places in the neighbourhood. In this case I had no direct evidence of fire-raising, but the circumstances struck me as most suspicious.

3. *Boundaries.*—There is evidence of the alteration of the boundary pillars of several village forests in the Eastern Doon. These matters are being enquired into. The progress of the survey will be reported on by Mr. Grant.

Information is very much wanted with regard to the agreements made with grantees and zemindars in cases where, by the straightening of th forest boundaries, land was taken or given. In some cases where pieces of land were thrown into grants or villages without any being received in exchange by Government, a right to the timber was reserved by Government; in others the timber was given with the land. A record of all such transactions is much wanted. This office contains no information whatever as to these matters beyond a few maps.

4. *Line-cutting.*—Much has not been done during the past season. The work will be carried on hereafter.

5. *Grazing.*—Grazing is permitted in all the Doon Government Forests, and hence one cause of the prevalence of fires.

The collection of grazing dues is a matter of some difficulty owing to the unusually irregular way in which cattle come from a distance to graze for portions only of a season, and also to the number of Bunjarahs engaged in carriage for Chukratta and Mussoorie, whose cattle feed in the forests for a few days at a time in passing.

The dues at present levied are—for a buffalo 3 annas; for cattle, 1 anna; while goats and sheep graze free. These rates appear low, and a memo. on the propriety of raising them and of collecting them by a new method will be submitted for orders.

6. *Communications.*— In as far only as the forest lines are available as roads, is this Department concerned with these. The orders of the Conservator regarding the formation of rideable paths on the lines will be carried out in the cold weather. The district roads by which forest produce chiefly passes, are not very good.

7. *Plantations.*—Beyond the maintenance of the Forest Nursery begun by Mr. Colvin, nothing has been done under this head. The subject shall have attention, if possible, during the coming cold season. In the meantime the nursery is being continued, and arrangements are being made for sowing Australian timber seeds. The increasing scarcity of firewood for the supply both of local wants and of the railways is a serious matter. In the Doon itself, the tea planters require a large quantity; and the manager of one of the largest gardens tells me that the Company's jungle having been all felled, he is under the necessity of cutting down mango groves; and, indeed, it is evident that the destruction of the mango groves, which lend so much to the beauty and salubrity of the Doon, is only a question of time. The inexorable demand for wood is being met simply by cutting. Hardly anywhere is planting being carried on. However, this wholesale destruction of growing timber is but part of a large question, the gravity of which as affecting climate, rain-fall, and fertility of the soil, is hardly as yet recognized.

8. *Bhoom.*—A bhoom on the faggot principle, of layers of bamboos lashed to a central supporting wire-rope, having been put together during last cold weather by Mr. O'Callaghan, was launched in April on the Ganges, at Rikhekhess, about 12 miles above Hurdwar. I regret to say that it has not succeeded, and that from the great pressure of the river during the floods it became partly submerged soon after it was launched. The degree of submergence has steadily increased, and for sometime the bamboos have been breaking loose.

The arrangements for catching timber are now being carried out under the management of Mr. Wilson, Government Contractor.

III.—Yield of Forests.

1. *Timber.*—There have been no timber operations proper in the Doon itself during the past year. All that I have to record is, therefore, the result of the collection of the deodar and cheer felled in the Bhagarutty, floated down the Ganges, and depôted and sold in this Division.

These results may be tabulated as follows :—

DEODAR.		*Logs.*
Deodar logs caught on Ganges and brought to Depôt between 1st April, 1869, and 31st March, 1870		3,204
Sold during same period	1,942	
Cut up in Depôt	473	
Remaining in Depôt	789	3,204

From the 473 logs cut up in the Depôt were taken 781 sleepers for the State Railway, besides planks and kurries.

CHEER.		*Logs.*
Cheer logs caught and depôted between 1st April and 31st March, 1870		2,096
Sold in logs	406	
Cut up in Depôt	81	
Remaining in Depôt at 31st March, 1870 ...	1,609	2,096

The 81 logs cut up in the Depôt were made into 351 kurries. In addition to the timber brought into Depôt, there are lying at various spots on the banks of the river between Kunkhul and Gurhmuktesur, some logs which, probably from floating past during the night, escaped the catchers at Kunkhul. These consist of—

Deodar logs, good	176	
Ditto, ruddi	561	
		737
Cheer logs, good	138	
Ditto, ruddi	139	277

2. *Kham Tehseel.*—The exports from the forests under this head consist of bamboos, grass, gum, the timber lying on the recently cut lines, &c., &c. There is no doubt a great deal taken out of the forests by smuggling ; and that the revenue raised under this head is much less than it ought to be. Some of the difficulties in the collection of revenue have been already indicated under the head of *Inspection.* To these must be added the facility with which the produce of Government forests can be exported as that of private grants and villages, and the utter venality of the Native establishment. The difficulties of preventing peculation in this Division are very great ; and, without increased European supervision, I fear thorough reform will be impossible. The additional expense would, I think, be easily covered by the increased revenue ; and, if Mr. Rind's services can be continued to the Division, some progress could doubtless be made towards this desirable result.

IV.—FINANCIAL RESULTS.

These are stated in full in the accompanying forms.

The net results may be summed up as follows :—

Revenue during 1869-70.

	Rs.	As.	P.
Under Head I., sale of timber brought to Depôt (this is for deodar and cheer, the produce of the Bhugarutty valley,) ...	44,597	13	7
Under Headings II. and IV. to IX., collected by Kham Tehseel, the produce being that of the Doon Forests	34,354	5	6
Total Revenue ...	78,952	3	1

Expenditure.

	Rs.	As.	P.
Under Heading A.I., *viz.*, timber expenses, are included sums debitable directly to the deodar and cheer floated down from the Bhagarutty	14,092	9	11
Under Headings A.II, to A.X., and BI. 2, to B. III. 4, debitable chiefly to Kham Tehseel Establishments, survey expenses of the Doon ; but a moiety is undoubtedly chargeable against the timber brought from the Bhagarutty...	36,916	15	4
Total expenditure ...	51,009	9	3

V.—General Remarks.

1. *Office Establishment.*—The present head clerk has been but recently appointed. His predecessor had to be dismissed for misconduct in March, and for six weeks there was no proper clerk in the office. These irregularities have been very embarrassing, especially to one, like myself, new to the Division.

2. *Native Establishment.*—Of the members of this, I have little good to say. Peculation and bribery are, I have the best reason to believe, very common. This matter is, however, receiving earnest attention, and the investigation of it is the cause of my inspection tours since joining having been so much confined to the Eastern Doon.

3. *Valuation Survey.*—The real resources of the Doon Forests are not well known. We have pretty truthful general ideas as to the *comparative* goodness or badness of particular tracts; but anything like a *valuation* has not been yet effected. I agree with Mr. Colvin in thinking this point well worthy of attention, and I think were it carried out it would be found that the Government property in the Doon Forests is much more valuable than is generally supposed. Were the forests to be opened after a few years rest, and regularly worked in blocks on proper principles, the amount of revenue from them would, I think, be agreeably surprising.

4. *Measures for more efficient control of exports.*—Unless the Forest Officer be provided with some legal powers of supervising all exports of forest products whatever from the Doon—whether the produce of Government or of private forests—I do not see how the Government revenue will ever be efficiently collected. Were the Forest Officer authorised to insist that all exports from private forests be accompanied by permits from the zemindars or grantees exporting, were the power given him to detain exports not accompanied by such permits, and were private exporters obliged to register their permits at the Forest Office, great steps would be gained. These, besides other suggestions having been already submitted to Conservator, it seems unnecessary to add more on this head.

Dehra,
15*th June*, 1870.

G. KING,
Assistant Conservator of Forests,
Dehra Doon Division.

(2.) REPORT BY Mr. G. GREIG, ON KUMAON FORESTS.

"*Forest work.*—During the past year, *viz.*, from 1st June, 1869, to 31st May, 1870, 1,085 logs (which were felled in February and March, 1869, in the Kooria Kurruk Forest) have been carted out. Of these, 1,055, containing about 42,200 cubic feet, have been stacked in the Ramnuggur Depôt (about 17 miles), and the remaining 30, containing about 1,200 cubic feet, in the Forest Depôt at Mohan (about 5 miles).

"In this forest 12,376 kurries were sawn, containing about 19,500 cubic feet. All these have been stacked in the Ramnuggur Depôt (about 17 miles).

"In the Doorgadeh, Kolbaug, &c., Forests, 2,500 trees were felled, which gave 3,200 logs. Of these logs, 189, containing about 7,560 cubic feet, have been carted

to Ramnuggur Depôt (about 20 miles); 1,451, containing about 58,040 cubic feet, to the Forest Depôt at Mohan (about 8 miles); and the remaining 1,560, containing about 62,400 cubic feet, are still in the forests.

"In these forests 28,307 kurries were sawn; 11,914, containing about 18,722 cubic feet, have been carted to Ramnuggur (about 20 miles); and the remaining 16,393, containing about 25,760 cubic feet, to the Forest Depôt of Mowawar (about 10 miles).

"It, therefore, appears that 1,244 logs, containing about 49,760 cubic feet, have been carted to the Ramnuggur Depôt; 1,481 logs, containing about 59,240 cubic feet, to the Forest Depôt of Mohan; and 1,560 logs, containing about 62,400 cubic feet, are still in the forests.

"40,683 kurries have been sawn, of which 24,290, containing about 38,222 cubic feet, have been carted to Ramnuggur, and the remaining 16,393, containing about 25,760 cubic feet, to the Forest Depôt at Mowawar. Work is still going on, and I am in hopes that nearly, if not all, the kurries will arrive at Ramnuggur before the rains set in, and a good many more logs will be brought down to Mohan.

"*Kham Tehseel.*— 'Dry wood' this year brought in Rs. 48,032-0-11, being an increase of Rs. 9,157-12-0. The Futtehrampore Forest was opened to exporters on account of the number of dead trees in it. This forest alone brought in Rs. 14,000.

"'Bamboos' only fetched Rs. 4,449-10-6, being a decrease of Rs. 6,100-8-7. The falling off was in the months of March, April, and May.

"'Catichue' fetched Rs. 5,866-6-0, being a decrease of Rs. 1,384-14-5. The export of this article fluctuates considerably.

*"'Rotteleria' fetched Rs. 7,519-0-11, being an increase of Rs. 7,104-1-8. The trees of this year bore a large amount of fruit; whereas last year just the contrary.

"'Bhabur' fetched Rs. 1,288-14-2, being a decrease of Rs. 1,333.

"'Limo' fetched Rs. 6,252-1-0, being a decrease of Rs. 8,488-12-0. From November, 1868, to January, 1869, the revenue was Rs. 6,700; whereas, from November, 1869, to January, 1870, it was only Rs. 1,130. The only way I can account for this decrease is that the carts must have been employed elsewhere on more profitable work.

"'Khyr Chooruns,' &c., fetched Rs 5,140-1-1, being an increase of Rs. 1,403-7-1.

"'Naspât' fetched Rs. 1,056-9-6, being a decrease of Rs. 608-5-3.

"Miscellaneous articles, such as wax, honey, &c., fetched Rs. 13,098-13-9, being a decrease of Rs. 4,966-13-1. The decrease in this and the former article may be accounted for by so many hill-men being employed on the various and extensive Government works going on last winter in Kumaon."

(3.) REPORT BY MR. BRERETON, ON GURHWAL FORESTS.

"The condition of the roads must always materially affect the yield of any forest. The roads in Gurhwal, taken as a whole, are very good; indeed, I think I am not mistaken in stating that they may be considered in as good condition as those in any Forest Division in India, where the hilly nature of the ground is taken into consideration; but the cost both of making and repairing has hitherto been expensive, especially the latter, as no less than Rs. 10,000 have been spent annually in repair alone —not always, I fear, advantageously. Of course, there are some main roads, such as that from Kalagurh to Buxar, Sunney, Seemulchour, &c., which, owing to the heavy damage effected during the burst of the monsoon, must always require to be repaired

* NOTE—I sent about eight maunds of this drug for £20 to Messrs Hanbury and Allen, wholesale chemists, of Lombard-street, last year. It is a vermifuge, and also a bright-yellow dye.

at a great cost; at the same time I observed that some of the minor roads were costing a very disproportionate amount with regard to the revenue derived from the export of minor forest produce. Although it is extremely difficult to reduce rates when once established, yet I trust I shall be able to contract for the repairs of the roads during the coming working season at a less cost than has been hitherto the case.

A statement is being prepared showing the revevue derived from export by each separate road. This will be kept up monthly, so that in future some data may be at hand by which the amount that might be spent on repairing roads may be seen at a glance, and the contracts given out accordingly.

The very excellent system established some six years ago for the collection of minor forest produce, and the satisfactory manner in which it works, being well known to yourself, I need not detail it here, but may just remark that the only error discovered, *viz.*, that of not entertaining a check establishment of sufficient strength, will be corrected next season, as at present only about 25 per cent. of rawunnahs are checked. I surmise an equal percentage could pass out free. I do not say they do so, as I think a wholesome fear is established by the excessive fines imposed on offenders; but, until 100 per cent. of the rawunnahs are checked, the check establishment cannot be considered perfect. A great number of cases of smuggling head loads of "Bhabur" grass having come to my knowledge, I propose to raise the fine on this article to 32 times the value instead of 16 times as at present.

The revenue realized for dry wood must necessarily decrease; and, indeed, it is already evident that the purchasers have much more difficulty to go to obtain it, and consequently wood is now being taken out which in former years was passed unnoticed. This is well; but I have cause to fear that, unless some strict measures are taken to prevent it, trees will be killed in the rains of one year to be taken out as dry wood the next. Indeed, in the Chandee Forests, young trees, partially burned, have, to a great extent, been cut as dead for "tores," so great is the demand on the Ganges for this class of wood. A proposal for the better prevention of the above will be submitted for sanction during the recess, when I have sufficient leisure to mature it.

(4.) MEMO. ON GURHWAL KHAM TEHSEEL, BY DOCTOR KING.

By the Kham Tehseel Department all the revenue of the Division (save that derived from the sale of sál timber felled by Government) is collected. The collection for 1868-69 amounted to about Rs. 1,17,000, and the cost of collection to about Rs. 10,500. The cost of collection includes the following items:—

1st,—Pay of Chowkee Mohurrirs and Chupprasees.

2nd,—Pay of Superintendent (Native).

3rd,—Pay of check establishment including Deputy Superintendents and Chupprasees.

4th,—Share of office establishment.

5th,—Erection of *huts* at chowkees.

6th,—Travelling expenses of native establishment.

7th,—A few extra miscellaneous expenses.

8th,—Printing rawunnahs, &c.

Any one is allowed to enter the forest to collect produce, and to take it out on paying the duty as laid down in the Tariff.

The articles of which the cutting and export are entirely forbidden, are (1) sál of any sort unless dry; (2) green wood of any kind, except khyr, which is exported as cheerans; dry sál may be exported provided it has lost its bark, but not otherwise.

To prevent the collection or cutting of forbiddon articles, there is an establishment of Patrols and Rangers whose duty it is to patrol the forest and to stop all illicit cutting

or other malpractices; all unauthorized grazing, &c. These form the conservancy establishment, &c., are under the orders of Deputy Conservator (Colonel Baugh), that officer being responsible for conservancy; they, however, report to the Assistant Conservator.

There being very small export towards the hills, no duty is taken on articles taken hill-wards.

The Superintendent (Native) of the Kham Tehseel has been hitherto in charge of the roads (but this arrangement is now suspended), also in charge by the roads, as well as of timber operations.

So long as forbidden articles are not cut or collected, no cognisance is taken of the collection of jungle products at the various Depôts established within the forest by exporters, but as soon as articles begin to be removed, it is the duty of the chowkee chuppraseeS to see that are passed through a chowkee, and not smuggled, and of the mohurrirs to levy the regulation duty.

The forest is bounded on the west by the river Ganges, and on the east by a nullah west of the cattle station by Koteerao. The southern boundary is a road which separates the forest from the Bijnour district.

Chowkee below the road.
Prempooric.
Gaoghât.
Bhogpore.
Bagnalla.

The export chowkees are 18 in number (not including the temporary one at Gaoghât), and they are all situated, except those marginally noted, at convenient spots above or upon the boundary road. Exporters are required to bring their merchandise to one of these chowkees, and there to pay duty upon it; on receiving the duty the mohurrir grants a rawunnah or pass, on which are written an enumeration of the merchandise, with all particulars as to rate, exporter's name, date, &c.

The rawunnah is also numbered. The chowkees are placed *theoretically* at all points where tracks proceed from the forest (or rather from the boundary road) towards the plains.

Practically, however, there are many roads running southward to the plains, at the origin of which, from the boundary road, there are no chowkees.

There are also many tracks (by which merchandise is brought *from the forest to the boundary road* which join the latter at points remote from chowkees. All merchandise exported by such roads is supposed to pay duty at the nearest chowkee; and, to prevent smuggling by such tracks, is one of the duties of the chowkee chuppraseeS. In some cases, where several tracks starting at different points along the boundary road meet at one place at some distance *below* that road, a chowkee is placed at that point, and not on the road.

All rawunnahs are supposed to be checked by the check establishment patrolling below the road.

This consists of * two Deputies and four chuppraseeS.

The Deputies check the merchandise by the rawunnahs, retain the latter, and return them to the Assistant Conservator's office. The Deputy grants a check rawunnah. All articles exported without rawunnah are liable to be taxed sixteen times the regular duty; a fourth part of this fine goes to the Deputy, or chuppraseeS, who captured the smuggler. Returns of all captures have to be sent to Assistant Conservator's office; Deputies report to office once a week.†

---

* There is a third Deputy with one chuppraseeS stationed permanently at Mayapore on the Ganges to check things floated down the canal and river.

† In the case of the articles *actually* exported being in excess of the quantity written in the rawunnah, the intention to cheat is credited to the exporter, and the mohurrir is credited with a mistake merely, though it is quite evident that he may have intentionally (through bribery) allowed more articles to pass than he entered in the rawunnah on the chance of the smuggled things escaping, as they might easily do if loaded on a separate cart.

Chowkee mohurrirs send on their collections daily—Bhogpore and chowkees west of Bhogpore to the Kotwara Thannah, and those east of Bhogpore to Ramnuggur. The conveyance of these collections daily to the next chowkee is one of the duties of the chowkee chupprasees.

The mohurrirs also send daily returns of their collections to head office, and these returns are compared with the Deputies' returns, and are also checked with the rawunnahs returned by the Deputies. All discrepancies are made good by the mohurrirs. By this check system smugglers are supposed to be prevented.

As *all* the rawunnahs issued by the mohurrirs at the chowkees are not recovered by the Deputies and their chupprasees, but rather less than one-half only, it is clear that, without any collusion whatever, goods for which no rawunnah has been obtained may escape.

If there be collusion between the mohurrirs and the checking establishment smuggling is easy. There is no doubt smuggling is carried on; to prevent it the following alterations on the present system are required:—

1*st*,—The chowkees ought invariably to be on the road by which exports pass. At present several are, for the convenience of the mohurrirs, at some little distance, within villages, &c. Where several roads go southward, the chowkee ought to be on the chief one. All tracks ought, where practicable, to be made to converge at the chowkee. Where several tracks joining or leaving the boundary road at some distance from the chowkee are indispensible, and where these are not of sufficient importance to support a chowkee on each, *more chupprasees should* be allowed to the nearest chowkee, that is, the one pass which they are supposed to get rawunnahs. The extra chupprasees should be made to patrol such side-tracks so as to prevent smuggling thereon, as under the present arrangement there are only two, or at most three, chupprasees at each chowkee. The duties of these men are:—

(*a*).—To help the mohurrirs to count articles exported, bamboos, &c.

(*b*).—To carry the daily collection to the next chowkee.

(*c*).—To carry the Assistant Conservator's dâk when necessary.

(*d*).—To patrol so as to prevent smuggling by side-tracks.

There are other minor duties, such as to keep the chowkee while the mohurrir is out, to fetch the water, &c., and for these minor purposes it is probable that one chupprasee is actually always kept at each chowkee.

As all the duties, except (*d*), are such as cannot be escaped, there is no doubt it is performed in a most slovenly way.

There is, besides, the chance of chupprasees being tampered with by exporters.

2. The check establishment which patrols below the road should be increased. At present it consists of one Deputy and one chupprasee, and stationed at Mayapore; and of 2 Deputies and 4 chupprasees patrolling from the Ganges to the Kumaon boundary—a ridiculously wide range for so few men.

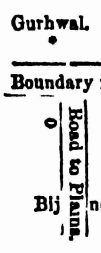
3. *Increased Superintendence.*—At present the Native Superintendent of Kham Tehseel is also Superintendent of Roads. *He* runs along the chowkees inspecting the mohurrirs' books and work, settling minor disputes, &c. His inspection ought to be more rigid, and the mohurrir ought to be required to report to the office the date of his visits, so as to afford some check on him.

4. The check establishment ought to be inspected. At present it is not inspected by anybody.

5. To be worthy of its name, the *check* establishment ought to be composed of men of different castes or of natives of different districts from the mohurrirs. The

mohurrirs being Hindoos and Gurhwalees, the check establishment ought to consist either of Mussulmans or Kumaonees. By collusion between exporters, mohurrirs, and check establishment, smuggling might be perfectly easy.

6. Whenever (as at Huldookhata) a chowkee of the Bijnour Thekadar is situated near a forest one, the removal of the former should be effected. At Huldookhata there is a Thekadar's chowkee on the opposite side of the road from the Gurwal Forest one, and on the corner of the road by which exports pass to the plains.



The Thekadar's chowkie at Huldookhata is situated above the district, where merchandise for export *can* be collected in Bijnour. In order to be passed through it, all merchandise must, by our inversion of the arrangement obtaining in Gurhwal, be brought *northwards*, cleared at the chowkee, and then taken southward. There is a meaning in this. The extensible one is that bamboos (the chief article of export) are taken to Asufgurh to be floated down the Ganges.

The real meaning, I believe, is that on the Gurhwal side of the boundary road there is a very extensive bamboo jungle, and that as it is clearly the Thekadars' interest to encourage illicit cutting above the road so as to increase his receipts, he puts a chowkee on the export road right opposite the Government one; and, to encourage exporters to patronize him, he leaves a lower rate of duty, and is not particular in counting the goods on which he grants rawunnahs.

(5.) REPORT BY Mr. O'CALLAGHAN ON BHAGARUTTY VALLEY FORESTS.

II.—Yield of Forests.

(5.) 5,765 deodar logs were put into the Ganges by Mr. Wilson, of Hurseel, between May and September, 1869. Of these 4,495 were *bonâ fide* taken out of the forests during that time, and were branded and measured previous to being set afloat. 4,381 logs contained less than 80 cubic feet each, and their aggregate contents was 143,950 cubic feet. For felling, logging up, taking to the water, and fairly setting these afloat, Mr. Wilson received Rs. 17,993-12-0, or 2 annas per cubic foot. As it was deemed advisable to bring a larger and more saleable timber into the market than the shorter logs, so frequently rejected on the score of length, a higher rate was paid for all logs the contents of which were or exceeded 80 cubic feet, in order to induce Mr. Wilson to undertake the handling of them. Therefore, on the 114 logs which make up 4,495, every one of which contained 80 cubic feet or upwards, their aggregate contents being 14,118 cubic feet, he received Rs. 2,647-2-0, or 3 annas per cubic foot. He was further paid a sum of Rs. 158-12-0, being 2 annas per log, for setting afloat 1,270 deodars which had been brought nearly to the water's edge the previous season. These 1,270 make up the 5,765 first quoted, which, again, with 780 before in the river, make the total now there 6,545 logs. These valued at Rs. 6 each, the price paid for them by Mr. Wilson for the sleeper contract, represent Rs. 39,270, or an outlay of Rs. 20,799-10-0. But this is but a low valuation on the timber even in the river; and, in fact, is nearly a nominal price. Besides deodar, there are yet 1,051 sheer logs in the rivers: 431 between Durassoo and Rikhekhess, and 620 in the first 16 miles up the Bhilling.

IV.—General Remarks.

The first of these is the Bhagarutty valley road, on which since the last report the three remaining difficult points between Rikhekhess and Reerah have been, it is true, but very partially opened, but yet sufficiently so to enable passengers to get along on a fair gradient, and without in any place being compelled to clamber up the face of the precipices as formerly. A very tolerable path has also been carried from Reerah to Dubranee, and good work was done by Mr. H. Wilson during the winter months on the Singe and other precipices below Bhatwaree. Two galvanized wire-rope sus-

pension bridges across the Ganges have been completed at Bhookoe and Reerah. The latter, which is the wider of the two, and which may be accepted as the average span of bridge that will be required in these hills (having 150 feet of clear seving from pier to pier, and a road-way of 120 feet), cost as follows:—

	Rs.	As.	P.
Six deodars 25 feet long, brought from a distance for piers and anchors	65	0	0
Two Main ropes 4¾ inches circumference, galvanized wire carriage included	562	0	0
Two guy and 3 drop-ropes, 3 inches circumference, ditto ditto,	50	0	0
760 feet of wire-rope 1½ inch circumference, for hand and drop ropes	196	0	0
Galvanized iron wire for whipping	24	6	10
21 transverse, 20 longitudinal beams, and 166 planks ...	230	12	4
36 iron bolts and nuts, carriage included	45	0	0
240 screws, 6 inches circumference, ditto	30	15	10
Labour on the work	590	5	0
Total Rs. ...	1,794	8	0

The second work was the Rikhekhess bhoom across the Ganges. For this Rs. 7,000 were sanctioned, and the expenditure has been:—

	Rs.	As.	P.
1,150 maunds of lime, @ Rs. 11 per 100 maunds ...	126	7	11
373 ditto of Soorkee @ ,, 8	45	13	4
18,800 bamboos	235	0	0
40 piles of 40 feet each	200	0	0
1 galvanized wire-rope 4¾ inches circumference, 960 long	844	0	0
1 English hemp-rope, whipping-wire and rope-yarn ...	163	1	0
Freight on the two foregoing items	175	7	9
1 crab winch (not yet paid for)	200	0	0
1,200 galvanized wire-rope 1½ inch circumference, for guys	128	13	8
Freight on last item	18	0	3
Ditto on barrels of tar from Dehra	2	10	0
2 iron pans for boiling tar	11	5	0
Coolie hire on tools from Durassoo	7	14	0

	Rs.	As.	P.			
Labour for December, 1869 ...	835	3	8			
Ditto January, 1870	1,127	15	10			
Ditto February, ,, ...	1,111	14	3			
Ditto March, ,, ...	1,069	6	7			
Ditto April, ,, ...	939	12	2			
Ditto May, ,, ...	167	4	0	5,251	8	7
Total Rs. ...				7,410	0	6

Guys to support the bhoom were not decided upon till the hot weather was approaching, and they had to be put in hastily, and at a disadvantage. The wire-ropes were barely in time from Calcutta, and were hardly fastened when a sudden flood

swept away the timbers and left the bhoom riding on its own unsupported strength, and unfortunately submerged throughout three-fourths of its length.

(6.) MEMO. ON PROGRESS OF BHAGARUTTY VALLEY ROAD BY Mr. DENMEADE.

Between Jangla and Sone Gad, a distance of 15 miles, the Bhagarutty Valley Road is not yet aligned; between Sone Gad and Bhutwaree, 15 miles, work is being pushed on as speedily as the supplies of grain—which is not abundant in the valley, and which is in great demand this year—will admit. It is expected the length from Bhutwaree to Debrain, 12 miles, together with the four wire-rope bridges over the Ganges, will be completed this season.

Between Bhutwaree and Durassoo, 35 miles, work is stopped. This length is open for foot passengers, and the goats and sheep on which the hill traffic is carried; except at the Bhutwaree precipice on the 48th mile, and the Barahat precipice on the 45th mile: the former is being opened out.

At Barahat the road is not completely finished across the precipice, but a scaffolding is erected on the line of road over which the traffic passes.

Materials are at site for the Gowana, Gungori, Munupi, Ruthouri, Gar, and Nakoori Gar bridges, and the masonry abutments of the first two are built.

FORM A.

Annual Statement of Timber on hand on the 31st March, 1870.

Name of Depôts.	Description of Timber.	Pieces, Number.	Quantity, cubic feet.	Estimated selling rate per 100 cubic feet.	Estimated value.	Total per Depôt.
				Rs. As P.	Rs. As P.	Rs. As. P.
Ramnuggur (Kumaon)	Sál Logs	1,245	53,290′ 0″ 3‴	125 0 0	66,612 8 5	
	„ Kurries	12,808	18,143′ 1″ 6‴	1 0 0 per c. foot.	18,143 2 0	
	„ Gaindas	22	98′ 3″ 0‴	31 4 0 „ 100 c. feet.	30 15 0	
	„ Kurries	26	Cubical measure not inserted, as the timber has been pronounced useless and struck off stock	Valuation.	*Nil*	
	„ Plank	5				
	„ Joras and Sleepers ...	4				
	„ Beams	2				84,786 9 5
Seemulchour (Gurhwal)	Sál Logs	1,010	45,845′ 1″ 7‴	100 0 0	45,845 2 1	
	„ Kolnos	101	3,910′ 6″ 7‴	100 0 0	3,910 8 9	
	„ Gaindas	85	1,400′ 6″ 1‴	75 0 0	1,050 6 1	50,806 0 11
Miapore (Dehra Doon)	Deodar Logs	789	3,858′ 11″ 0‴	100 0 0	3,858 0 0	
	Ditto Kurries and Sleepers ...	928	3,243′ 10″ 0‴	100 0 0	3,243 0 0	
	Other sorts of Deodar ...	155				
	Cheer Logs	1,609	18,713′ 5″ 0‴	18 12 0	3,598 0 0	
	Ditto Kurries	351	541′ 0″ 0‴	12 0 0 per score.	210 0 0	10,819 0 0
Katee, Chukratta, Deobund } (Jounsar)	Deodar Kurries	7,747	4,015′ 0″ 0‴	87 8 0 per 100 c ft.	3,513 2 0	
	Bai ditto	370	1,190′ 0″ 0‴	12 8 0	148 12 0	
	„ Bullies	485	...	1 1 0 per piece.	515 5 0	4,177 3 0
Sukhivi (Goruckpore)	Sál Logs	1,614	23 696′ 10″ 11‴	20 0 0 per 100 c. ft.	4,539 0 0	4,539 0 0
Rehur (Bijnour)	Bullies	17,000	...	4 annas each	4,250 0 0	4,250 0 0
Jhansie	Bamboos and Beams... ...	3,004	Valued with other stock, such as fuel, grass, &c., at ...	...	1,510 0 0	1,510 0 0
...	...	..	...	Grand Total, Rs. ...	...	1,60,887 13 4

DATED NYNEE TAL:
The 28th June, 1870.

R. P. COLVIN,
Dy. Conservator of Forests, N.-W. P.

No. 21.

Annual Summary of Revenue and Expenditure in the different Divisions during the year 1869-70.

Classification.	Direction.	Kumaon.	Gurhwal.	Debra Doon.	Jounsar.	Bhagaruttee.	Goruckpore.	Rohilkhund.	Jhansie.	Total.
	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.
Receipts.										
I.—Sale of Timber at Depôts ...	...	1,36,737 12 6	35,827 8 7	44,023 0 7	65,335 4 0	...	1,212 0 0	...	...	2,83,135 9 8
II.—Sale of Timber removed by purchasers	...	28,908 12 0	31,775 12 2	19,296 4 8	11,080 1 3	2,200 0 0	7,233 6 4	1,785 15 9 ...	1,589 5 8	1,03,569 9 10
III.—Duty on Foreign Timber ...	...	...	...	...	...	...	...	...	...	...
IV.—Permit Fees	...	...	...	10,729 14 7	9,868 12 10	9 0 9	2,248 4 3	2,350 0 0	30 0 0	25,236 0 5
V.—Grazing Dues	...	8,669 0 0	899 7 5	3,903 13 3	133 11 11	...	4,170 15 7	5,558 2 0	3,115 3 6	26,449 5 8
VI.—Sale of Fruits, &c.	...	80,463 12 1	79,893 2 10	1,131 2 9	80 12 6	...	4,740 3 11	24,540 0 0	851 6 0	1,91,700 8 1
VII.—Sale of Confiscated Timber ...	...	31 0 0	185 0 0	3,277 1 8	221 8 0	...	...	...	...	3,714 9 8
VIII.—Fines and Forfeitures ...	6 10 8	472 3 11	165 13 4	748 2 6	199 2 3	...	10 0 0	...	...	1,602 0 8
IX.—Miscellaneous	7 6 6	50 0 11	225 11 3	1,142 9 2	6,744 3 4	2,299 6 6	102 9 0	26 10 3	2,053 0 0	12,651 8 11
Total Receipts ...	14 1 2	2,55,332 9 5	1,48,972 7 7	84,252 1 2	93,662 8 1	4,508 7 3	19,717 7 1	34,260 12 0	7,638 15 2	6,48,359 4 11
Conservancy and Working.										
I.—Timber Expenses	...	14,266 11 9	30,999 15 9	14,092 9 11	21,634 14 2	24,187 9 4	1,906 5 4	328 0 0	406 15 1	1,07,823 1 4
II.—Purchases of Stock and Cattle ...	...	2,380 13 0	498 5 3	684 9 4	1,082 5 6	8,391 14 0	...	...	80 0 0	13,117 15 1
III —Feed and Keep of Cattle ...	...	2,088 11 4	1,267 3 11	4,060 6 2	...	123 6 0	374 0 0	11 9 7	487 14 8	8,413 3 8
IV.—Rent of Leased Forests ...	...	...	...	...	...	11,419 14 3	...	213 6 5	...	11,633 4 8
V.—Charges in collecting Revenue on Grass, &c.	...	9,000 0 0	9,466 12 6	...	644 0 0	...	...	958 9 7	806 12 10	20,876 2 11
VI.—Plantations	...	1,068 14 11	...	320 3 8	77 8 0	...	16 0 0	...	548 10 6	2,031 5 1
VII.—Forest Work	...	2,365 5 4	853 3 11	846 9 10	1,168 11 9	...	986 2 7	...	658 6 8	6,908 8 1
VIII.—Forest Survey	...	397 6 0	552 0 0	2,229 3 6	489 1 1	3,134 9 4	...	...	...	6,802 3 11
IX.—Experiments on Timber ...	...	...	...	1 4 0	...	...	...	...	...	1 4 0
X.—Communications and Buildings ...	...	16,006 2 5	15,053 5 6	3,335 13 4	10,817 6 4	29,985 4 0	1,000 0 0	3,598 2 6	300 15 4	80,097 1 5
Total, Conservancy and Working ...	...	47,574 0 9	58,720 14 10	25,570 11 9	35,913 14 10	77,242 3 11	4,282 7 11	5,109 12 1	3,289 11 1	2,57,704 2 2

Establishments.											
I.—Salaries	21,356 0 0	21,118 6 8 — 3,000 0 0	10,018 8 4	21,255 7 0	4,511 6 10	9,392 0 0	6,001 14 6	2,088 0 0	2,253 13 11	97,995 9 3 — 3 000 0 0
II.—Allowances	5,528 8 5	4,316 5 11 + 3,000 0 0	1,218 10 5	2,910 1 1	2,892 0 5	2,854 0 0	598 0 0	...	...	20 317 10 3 + 3 000 0 0
III.—Contingencies	2,433 11 7	1,208 12 10	1,003 9 3	771 15 11	1,157 1 4	761 9 9	205 7 4	54 4 0	30 15 8	7,627 7 8
Total Establishments ...	29,318 4 0	26,643 9 5	12,240 12 0	24,937 8 0	8,560 8 7	13,007 9 9	6,805 5 10	2,142 4 0	2,284 13 7	1,25,940 11 2
Grand Total, Expenditure ...	29,318 4 0	74,217 10 2	70,961 10 10	50,508 3 9	44,474 7 5	90,250 2 8	11,087 13 9	7,252 0 1	5,574 8 8	3,83,644 13 4

OFFICE OF CONSERVATOR OF FORESTS:
N.-W. P.:
Dated the 28th June, 1870.

(Sd) R. P. COLVIN,
Deputy Conservator of Forests, N.-W. P.

No. 22.

DR. *Annual Abstract Account of the Cash Transactions of the Forest Department in the North-Western Provinces, 1869-70.* CR.

Year.	Heads of Account.	Rs.	As.	P.	Year.	Heads of Account.	Rs.	As.	P.
1869-70.	To Cash balance in hand on 1st April, 1869 :—				1869-70.	By balance due on 1st April, 1869, to Bhagaruttee Division :			
	Kumaon Division	54,580	5	5		By expenditure of the Department:—			
	Gurhwal ditto	39,690	7	0		Direction Division	29,318	4	0
	Dehra Doon ditto	1,477	6	4		Kumaon ditto	74,217	10	2
	Jounsar ditto	2,916	9	2		Gurhwal ditto	70,961	10	10
	Jhansie ditto	3,707	9	8		Dehra Doon ditto	50,598	3	9
		1,02,372	5	7		Jounsar ditto	44,474	7	5
	To Revenue received during the year :—					Bhagaruttee ditto	90,250	2	8
	Direction Division	14	1	2		Goruckpore ditto	11,087	13	9
	Kumaon ditto	2,55,332	9	5		Rohilkhund ditto	7,252	0	1
	Gurhwal ditto	1,48,972	7	7		Jhansie ditto	5,574	8	8
	Dehra Doon ditto	84,252	1	2			3,83,644	13	4
	Jounsar ditto	93,662	8	1		By objectionable items :—			
	Bhagaruttee ditto	4,508	7	3		Kumaon Division	733	4	3
	Goruckpore ditto	19,717	7	1		Gurhwal ditto	273	8	9
	Rohilkhund ditto	34,260	12	0		Dehra Doon ditto	25	0	0
	Jhansie ditto	7,638	15	2		Jounsar ditto	75	0	0
		6,48,359	4	11			1,106	13	0
	To remittances from State Treasuries :—					By remittances to State Treasuries:—			
	Direction Division	28,607	14	11		Direction Division	1	3	0
	Kumaon ditto	75,371	8	4		Kumaon ditto	2,06,938	6	8
	Gurhwal ditto	77,110	0	0		Gurhwal ditto	1,49,708	8	2
	Dehra Doon ditto	50,995	1	10		Dehra Doon ditto	82,923	7	6
	Jounsar ditto	52,884	8	6		Jounsar ditto	18,031	12	8
	Bhagaruttee ditto	91,095	0	0			—203	2	0
	Goruckpore ditto	11,580	8	9		Bhagaruttee ditto	4,465	7	3
	Rohilkhund ditto	7,243	0	1		Goruckpore ditto	19,546	15	7
	Jhansie ditto	4,788	13	11		Rohilkhund ditto	34,260	12	0
		3,99,176	8	4		Jhansie ditto	7,077	4	6
							5,23,003	13	4
							—203	2	0
	Direction Division	306	7	11		By remittances to Public Works Department in transfer :—			
	Kumaon ditto	306	6	1		Kumaon Division	78,708	5	2
	Gurhwal ditto	75	8	7		Dehra Doon ditto	1,433	10	8
	Dehra Doon ditto	302	5	0		Jounsar ditto	75,672	3	4
	Jounsar ditto	115	14	9			+ 203	2	0
	Bhagaruttee ditto	197	7	8		Bhagaruttee ditto	773	10	0
	Goruckpore ditto	53	15	0			1,56,587	13	2
	Rohilkhund ditto	9	0	0			+ 203	2	0
		4,00,543	7	4					

1869-70.

To remittances from Public Works Department, Bhagaruttee Division ...	11 9 0	
To deposits received,—Jhansie Division	23 5 4	
To advances received:—		
Kumaon Division	1,184 4 3	
Gurhwal ditto	273 8 9	
Dehra Doon ditto	25 0 0	
Jounsar ditto	245 11 6	
Bhagaruttee ditto	1,153 0 0	
	2,881 8 6	
	+ 0 13 9	
To "Government of Madras," "Subscriptions on account of Madras Military Fund:"		
Direction Division	390 15 0	
To "Government of India" on account of Military & Orphan Fund subscriptions:—		
Kumaon Division	442 12 0	
Gurhwal ditto	40 4 0	
To Uncovenanted Service Family Pension Fund:—		
Gurhwal Division	72 10 0	
To "Civil Service Fund":—		
Jounsar Division	51 0 1	
	0 13 9	
	997 9 1	
	†0 13 9	
Military Department, Bengal:—		
Value of Magazine stores supplied to Bhagaruttee Forest ...	742 0 0	
Government of India:—		
Credited on account of postage on official letters of the Forest Department	757 14 0	
Grand Total Rs.	11,55,169 1 9	
	†1,499 14 0	

1869-70.

By remittances in transfer with Military Department, Bengal:—		
Jhansie Division	1,785 0 0	
By deposits repaid:—		
Jhansie Division	23 5 4	
By advances made:—		
Kumaon Division	451 0 0	
Dehra Doon ditto	500 0 0	
Jounsar ditto	9,500 0 0	
	+ 18 6 2	
Bhagaruttee ditto	140 0 0	
	10,591 0 0	
	+ 18 6 2	
By refunds of Revenue:—		
Dehra Doon Division	114 10 3	
Jhansie ditto	102 10 3	
	217 4 6	
By Cash balances in hand on 31st March, 1870:—		
Kumaon Division	26,022 2 7	
Gurhwal ditto	45,291 2 2	
Dehra Doon ditto	69 7 10	
Jounsar ditto	1,572 12 8	
Bhagaruttee ditto	1,464 12 6	
Goruckpore ditto	717 1 6	
Jhansie ditto	1,595 15 4	
Pro. forma balance now under investigation, *vide* difference between cash shown in hand on 30th April and 1st May, 1869 } Dehra Doon Division ...	1,477 6 4	
	78,210 12 11	
Cost of Magazine stores supplied to Bhagaruttee Forests by Military Department	742 0 0	
Postage on official letters	757 14 0	
Grand total as *per contra*, Rs. ...	11,55,169 1 9	
	1,499 14 0	

OFFICE OF CONSERVATOR OF FORESTS,
Dated the 28th June, 1870.

(Sd.) R. P. COLVIN,
Deputy Conservator of Forests, N.-W. Provinces.

No. 23.

Annual Statement of Outstandings and Liabilities of the Department on Account of Contractors and Disbursers, for the year 1869-70.

Division.	*Department Debtor.*			*Department Creditor.*			*Balances Due.*	
	At commencement of year.	Recoveries in cash, and value of supplies and work done during year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To Department (Outstandings).	By Department (Liabilities).
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Kumaon	...	1,45,902 11 0	1,45,902 11 0	1,42,760 1 5	13,486 14 6	1,56,246 15 11	10,344 4 11	...
Gurhwal	674 15 6	88,554 5 4	89,229 4 10	10,584 6 10	79,604 9 0	90,188 15 10	2,623 1 5	1,663 6 5
Dehra Doon	...	3,796 8 6	3,796 8 6	1,182 10 10	3,605 14 3	4,788 9 1	992 0 7	...
Jounsar	...	52,668 1 0	52,668 1 0	780 0 0	69,809 15 0	70,589 15 0	17,921 14 0	...
Bhagaruttee	20,000 0 0	29,034 5 0	49,034 5 0	2,000 0 0	42,146 9 7	44,146 9 7	3,692 6 4	8,580 1 9
Goruckpore	...	17,747 8 7	17,747 8 7	...	19,843 8 6	19,843 8 6	2,095 15 11	...
Rohilkhund (Bijnour)	...	2,350 10 0	2,350 10 0	1,358 10 0	...	1,358 10 0	...	992 0 0
Jhansie	...	...	...	...	71 12 9	71 12 9	71 12 9	...
Total	20,674 15 6	3,40,054 1 5	3,60,729 0 11	1,58,665 13 1	2,28,569 3 7	3,87,235 0 8	37,741 7 11	11,235 8 2

OFFICE OF CONSERVATOR OF FORESTS:
Dated the 28th June, 1870.

(Sd.) R. P. COLVIN,
Dy. Conservator of Forests, N.-W. P.

No. 24.

Statement of Timber brought to Depôts from the different Forest Divisions during 1869-70.

Name of River or Division.	Forest	Description of Timber.	Pieces, number.	Estimated cubic feet.	*Total of each River or Division.* Pieces.	Cubic Feet.	Remarks.
Kumaon	...	Sâl Logs	1,245	53,290′ 0″ 3‴			
		„ Beams	2	33 4 0			
		„ Gaindas	22	98 3 0			
		„ Miscellaneous ...	5	6 10 6			
		„ Kurries	12,834	18,208 2 6			
		„ Joras and Sleepers ...	4	8 7 4	14,112	71,645′ 3″ 7‴	
Ghurwal	...	Sâl Logs	1,621	64,169 6 11			
		„ Koloos	130	4,736 8 11			
		„ Gaindas	115	1,901 9 6			
		„ Kurries	8,610	13,901 9 11	10,476	8 4,70 9 11″ 3‴	
Dehra Doon	...	Deodar Logs	3,204	37,243 5 0			
		Cheer „	2,096	26,997 0 0			
		Sâl „	51	255 0 0			
		Cheer Kurries	351	541 0 0			
		Deodar Sleepers	792	2,718 2 0			
		„ Kurries	171	259 3 0			
		„ Planks	1,277	1,571 10 0*	7,942	69,584′ 8″ 0‴	* Supl. feet.
Jounsar	...	Deodar Kurries	64,608	64,284 0 0			
		Rai „	19,064	19,627 0 0			
		„ Bullies	2,149	...	85,821	83,911, 6″ 0‴	
Goruckpore	...	Sâl Logs	887	9,779 11 1	887	9,779, 11″ 1‴	
Jhansie	...	Bamboos	10,366	...			
		Beams	50	...	10,416	...	
Rohilkhund (Bijnour)	...	Bullies	17,000	...	17,000	...	
Total number of Pieces ...	...	...	...	...	146,654		

Nynee Tal,
Dated the 28th June, 1870.

(Sd.) R. P. COLVIN,
Dy. Conservator of Forests, N.-W. P.

No. 25.

Annual Timber Account for 1869-70.

Particulars.												
Headings and Divisions.	Sál Logs.	Sál Kurries.	Sál, all other kinds of.	Deodar Logs.	Deodar Kurries and Sleepers.	Deodar Planks and Rai Kurries.	Bullies.	Cheor Logs.	Other kinds.	Pieces.	Totals.
1—Stock in hand at the Depôts of the following Divisions at the commencement of the year:—											
Kumaon ...	...	...	...	...	...	...	...	...	...	...	
Gurhwal ...	...	...	...	...	...	...	...	...	...	...	
Dehra Doon ...	...	...	...	1,160	...	...	...	...	2,000	3,160	
Bhagaruttee ...	...	...	...	...	...	...	...	...	...	...	
Jounsar ...	...	...	...	...	9,046	4,087	2,329	...	82	15,554	
Goruckpore ...	1,465	...	...	...	...	...	...	...	...	1,465	
Jhansie ...	...	...	...	...	...	...	4,744	...	...	4,744	
											24,913
II.—Timber received at Depôts from the Forests during the year:—											
Kumaon ...	...	...	...	...	...	...	...	...	...	...	
Gurhwal ...	611	8,610	59	...	...	...	...	...	...	9,280	
Dehra Doon ...	51	...	...	3,104	40	1,122	...	406	...	4,721	
Bhagaruttee ...	...	...	...	...	...	...	...	...	...	...	
Jounsar ...	...	...	...	...	65,907	18,538	3,943	...	...	88,388	
Goruckpore ...	485	...	...	...	...	...	...	...	...	485	
Jhansie ...	...	...	...	...	...	...	4,744	...	7,412	12,156	
Rohilkhund (Bijnour), ...	...	...	...	...	...	...	...	...	...	...	
											1,15,030
II.—Timber lost during the year:—											
				Converted.				Converted			
Dehra Doon ...	...	...	...	473	Lost & L. W.		Works.	81	2,000	2,551	
Jounsar ...	...	...	...	...	...	4,243	50	...	82	4,375	
Goruckpore ...	253	...	...	...	...	...	...	...	...	253	
											7,182
III—Stock in hand at the close of the year at the following Depôts:—											

Kumaonl ...	1,245	12,834	33	...	...	...	...	...	...	1,412		
Gurhwa ...	1,621	8,610	245	...	...	...	...	...	...	10,476		
Dehra Doon ...	51	...	...	3,204	963	1,277	...	2,096	351	7,942		
Bhagaruttee ...	...	...	...	...	...	...	...	...	...	...		
Jounsar ...	...	...	...	...	64,608	19,064	2,149	...	...	85,821		
Goruckpore ...	887	...	...	...	...	...	...	...	...	887		
Jhansie ...	...	...	...	...	...	...	...	...	10,416	10,416		
Rohilkhund (Bijnour) ...	...	...	...	...	...	...	17,000	...	...	17,000	1,46,654	
	Grand Total, Pieces, ...										1,71,567	

Kumaon ...	1,245	12,834	33	...	...	...	...	...	...	14,112	
Gurhwal ...	1,010	...	186	...	...	...	...	...	...	1,196	
Dehra Doon ...	...	...	...	789	923	155	...	1,609	351	3,827	
Bhagaruttee ...	...	...	...	...	...	...	...	...	...	...	
Jounsar ...	...	...	...	...	7,747	370	485	...	...	8,602	
Goruckpore ...	1,614	...	...	...	...	...	...	...	...	1,614	
Jhansie ...	...	...	...	...	...	...	...	...	3,004	3,004	
Rohilkhund (Bijnour) ...	...	...	...	...	...	...	17,000	...	...	17,000	49,355
	Grand Total, Pieces, ...										1,71,567

Nynee Tal:
Dated the 18th June, 1870.

(Sd.) R. P. COLVIN,
Deputy Conservator of Forests, N.-W. Provinces.

No. 26.

Statement showing the amount realized on account of the different classes of Timber sold during 1869-70.

Divisions.	No. of Logs and pieces sold.	Cubical Contents.	Amount realized and due on account of Timber sold.	Average amount per Log or Piece.	Average Cubical Contents of Logs and Pieces.	Average amount per 100 Cubic feet.	Remarks.	Pieces.
			Rs. As. P.	Rs. As. P.		Rs. As. P.		
Kumaon	...	...	...	...	...	...	Timber sold in previous years remaining unremoved at the commencement of the year ...	...
Gurhwal	9,280	33,653	35,828 0 0	3 14 0	3·6	106 12 6	Timber sold during the year ...	115,030
Dehra Doon	4,721	55,454	50,113 0 0	10 10 0	11 7	81 6 0		
Jounsar	88,388	86,508	76,503 0 0	0 14 0	1·	86 7 0		
Bhaga-uttee	...	...	...	...	...	...	Total ...	115,030
Goruckpore	485	6,542	1,626 0 0	3 6 0	13·5	25 0 0	Timber remaining unremoved at the close of the year	...
Jnansie	12,156	...	...	Proceeds	credited under	Head II.		
Rohilkhund	...	...	...	...	...	...	Balance removed from Depôts by purchasers during the year	115,030
Total ...	115,030	...	1,64 070 0 0	...	...	...		
	Deduct amount due, but not realized during the year ...		17,672 0 0					
	Balance ...		1,46,398 0 0					
	Add amount realized on account of former years ...		1,36,738 0 0					
	Add also amount realized for other kinds of Timber ...		...					
	Total shown as Revenue on account of Timber Sales ...		2,83,136 0 0					

Dated the 10th August, 1870.

(Sd.) R. P. COLVIN,
Depy. Conservator of Forests, N.-W. P.

No. 27.

Statement showing the amount expended on Account of Timber received from the different Forest Divisions during 1869-70.

Name of Division.	No. of Logs and pieces.	Cubical contents.	Timber Expenses.	Conservancy expenses, cost of Establishments &c., of the Department, including Direction.	Total amount expended including Direction.	Average amount paid per Log or Piece.	Average cubical contents per Log or piece.	Average amount paid per 100 Cubic Feet.	Remarks.
			Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.		Rs. As. P.	
Kumaon	14,112	71,645	14,267 0 0	34,058 0 0	48,325 0 0	3 6 0	5	67 7 2	
Gurhwal	10,476	84,710	81,000 0 0	11,497 0 0	42,497 0 0	4 0 11	8	50 2 8	
Dehra Doon	7,942	69,584	14,093 0 0	21,122 0 0	35,215 0 0	4 7 0	8·76	50 9 8	
Bhagaruttee	...	...	24,188 0 0	72,763 0 0	96,951 0 0	...	...	...	Expended on sleepers not yet brought out of forests.
Jounsar	85,821	83,911	21,635 0 0	20,061 0 0	41,696 0 0	0 7 9	·98	49 11 0	
Goruckpore	887	9,780	1,906 0 0	498 0 0	2,404 0 0	2 11 4	11·02	24 9 3	
Jhansie	10,416	...	407 0 0	738 0 0	1,145 0 0	...	...	...	No averages can be given.
Rohilkhund (Bijnour)	17,000	...	328 0 0	204 0 0	532 0 0	...	...	...	No averages can be given.

Dated the 10th of August, 1870.

(Sd.) R. P. COLVIN,
Deputy Conservator of Forests, N.-W. P.

No. 28.

Annual Account of Forest Revenue for the year 1869-70.

	Rs.
Receipts	6,48,359
Expenditure...	3,83,645
Surplus	2,64,714
Subtract difference between Assets and Liabilities at the commencement and close of the year	18,272
Net Revenue	2,46,442

NOTE.—Besides the above sums, which show the actual transactions on timber brought into the depôts, the value of timber in various states in the Forests and in transit may be approximately estimated at Rupees _____

Detail of difference between Assets and Liabilities at the commencement and close of the year.

	At the commencement of the year.	At the close of the year.	Difference.	
			In favour of the year.	Against the year.
	Rs.	Rs.	Rs.	Rs.
Value of Timber and other Stock	67,674	1,60,888	93,214	...
Outstanding on account of sales and excess payments to Contractors	1,58,666	37,741	...	1,20,925
Total Assets ...	2,26,340	1,98,629	93,214	1,20,925
Deduct Liabilities ...	20,675	11,236	9,439	...
Balance ...	2,05,665	1,87,393	1,02,653	1,20,925
Net difference against the year ...	...	...	...	18,272

Dated the 28th June, 1870.

(Sd.) R. P. COLVIN,

Depy. Conservator of Forests, N.-W. Provinces.